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ABSTRACT

Nineteen addresses given at the 1982 Oklahoma School Plant Manager's Workshop are presented in this document. Following a welcoming speech, an overview of the issues currently facing school plant managers in Oklahoma, and a general address by a representative of the Arkansas Department of Education, the speakers focused on a number of specific issues, including designing safe school facilities, the roles of inspection agencies, school inspection programs, school evacuation plans, school and classroom safety, and the current status of legislation affecting school plant management. Most of the talks are transcribed verbatim, though some are presented in the form of the speakers' outlines. Lists of participants, exhibitors, and door prize winners complete the document. (PGD)

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INTRODUCTION

The School Plant Services Section of the State Department of Education and the Oklahoma School Plant Manager's Association are happy to make available to you a copy of the proceedings of the Fourth Annual School Plant Managers Workshop.

If you have any questions about any of the presentations, give us a call in the School Plant Services Section or give the presenters a call and we will be most happy to help you any way we can.

WELCOME

Dr. Leslie Fisher, State Superintendent
State Department of Education

Ladies and gentlemen, members of the School Plant Managers Association, and guests. I bring you greetings from the State Board of Education and the State Vo-Tech Board. They are the people that I really work for and the people who make rules and regulations that most of us work under and for.

I don't think that there is any individual in a school that is much more important than another one, but I know of no person that's more important than the manager of the school plant. They are the people that know really pretty well all that we have to know about the school. In the life of a school, the manager of the plant is extremely important. What you know is important and what you do is important. What you cost is important to me as an administrator and to the administrator of your school, your school superintendent, second only to the salaries of the people in the school is what it cost to maintain and operate the school plant. So that's what your job and what you supervise costs. So it is important, and to go along with what Bob says about trying to get the legislature and powers that be at the State Capitol to provide us some money to help us do our job better. It is in the light that we have done that, because we think it is time that we do our job better and if you want to continue to do your job in the best way that you can you will continuously try to do a better job and upgrade your skills.

There will not be a person in the school system, there'll not be a counselor, there'll not be a teacher, there'll not be a coach, there'll not be any one person in a school system that will know as much about the students, about the teachers, about the administration, and about the community as the manager of a school plant. You know your responsibility covers the responsibility to the building, to the students, to the teachers, to the administration, to the board, and Lord only knows to the community. It is important that you continuously upgrade your skills. It is important that you know the human skills. If you truly are a good school plant manager, you will not be a person who will go around and tell all you know.

As a school manager, if you are a man that uses the power that you've got, and you've got a lot of it, the day you start using that you're like the state superintendent, you are like the school superintendent of the local school district, the day you start using that is the day you start losing it. If you can't provide enough leadership to get the job done and to get your staff to improve through leadership without trying to force people, you are not going to control your staff for long. Again it is important that you have good people in the jobs that you are in and continue to upgrade your skills, not only in the skills of maintaining the buildings, knowing when it's time to check the safety features of a building, but knowing the human skill that is necessary to do your job, and they are extremely important.

I know you will have a good conference here today, I can already see that. You are having a great start. I want to thank you for inviting me to come and participate. Incidentally, another reason I'm interested in it, is that I was a custodian before I was a teacher.

Thank you very much.

WORKSHOP OVERVIEW

Andy Young
Holdenville Public Schools

Safety in schools is probably not a dramatic topic. On news coverage, safety is not covered very often. What you see covered is danger, something happening when safety is not present. It's dramatic when something happens like a school burning or there is an explosion, there is some type of catastrophe. Those things make the news. We can count on the bad news making the papers, the television and the radio. Media pick that up pretty fast.

Safety itself is not news. There is nothing more boring than being safe. People don't have sayings like Safety is my business, it's Danger is my business. The thing that makes safety such an important topic is that we don't always have to have something really exciting going on at our place, and I'm sure you feel the same way. No news is good news. I'm always glad to try to cut off a crisis before it happens. We are all engaged in the State now at trying to meet certain standards and certain safety codes for our buildings and facilities. The reason we do that is for youngsters. We do not want to expose them to unsafe conditions and we feel like it is a very important part of the maintenance and operational personnel's job to secure the buildings and make them a safe, nice place to go to school.

That's why we came up with the format for this year's meeting and I think all of us are aware of the fact there have been several incidents happen around the state this year as indeed many years do happen where an accident, injury or death of students or school personnel draws a large focus of attention. I think all of us in schools realize that it could happen to us, it could happen at our place. Even with very careful plans, very well drawn out inspection system in our schools, things can still happen. We can't guarantee that nothing will happen. But on the other hand, I think we owe it to ourselves if we want to go home and sleep at night when we lay down. We like to get a little bit of rest and relaxation other than having to worry about and wonder if something is going to happen while sleeping tonight or something is going to happen tomorrow. We have to feel that we have done everything in our power to make our buildings safe for the people that we house. We are really saying this is one of the most important functions that we have is safety and we are trying to focus on it as a general theme of this meeting.

Someone once said the courage is not the absence of fear it is the conquest of fear. I think all of us are afraid sometimes; we talk about safety and all of us like to feel safe. When we go to bed at night, like I was talking about, we like to feel that our own home is safe and secure and that our family is safe inside the home and protected. It's a feeling that humans covet to feel safe. Just a fear does not solve anything, it takes some planning, preparation, some coordination, some awareness of possible danger so that we can avoid it. All of us have seen someone else touch a hot stove and hopefully we didn't have to go over and touch it too to find out, 'Hey, that really is hot.' I think that we have the opportunity to learn from any mistakes that any of us make. We don't have to make the same mistake six hundred and some times in the state of Oklahoma to solve any kind of a safety program.

I appreciate your attendance at this and I appreciate your participation and support for the School Plant Managers Organization in the state of Oklahoma. I want you to know that I think we have an excellent organization here for the third year, actually, of incorporation. I think we have made some great inroads as far as the organization is concerned. I think people in this organization who have been active in working with the legislature on trying to solve some of the problems of school plant management have been very successful in the past few years. Most of you who have been active in this area can look back a few years ago when legislation was presented to the legislature, potential legislation. Sometimes we had a hard time getting anyone to talk to us. This year, there have been more pieces of legislation considered in the area of school facilities than any other year in the history of our state. There are still some bills alive that are very important to all of us and could affect the quality of facilities in our state. I think that we are beginning to see a time when there has been some attention given to the operation and safety of school plants.

It's kind of a shame that something has to happen every once in a while that shakes us up and makes us think and gets us on about the business. I think there were things that happened during this year that made us stronger as far as presenting our case to the legislature. I think if it weren't for the fact that the general public and the legislature realized what an awesome task it is to keep school facilities safe, to keep good buildings up out there and to keep good equipment in them, if that wasn't brought home to them, they might just go on with business as usual. This has been a good year with the legislature, we have had more people listen to us than ever before, more bills considered. We still have some bills in place and I feel really good about that. There are many members of this group that have been active in lobbying the sup-

port of their legislature. I want to tell you how much I appreciate that.

We feel like there are some things in this program that are going to help you. Most of us are aware of several of the areas in the school where there can be problems, hazards, and dangers and we want to help pinpoint those for you and we want to give you information that can help you solve any potential safety problems in your school.

WORKSHOP ADDRESS

Conrad Wells
Arkansas Department of Education

I want you to get acquainted with my theme as soon as I figure out what it is. But, I'll say one thing to you, communication is absolutely essential to success in any area of activity, and certainly as school managers we must be able to communicate. I have the destinction of being able to handle one side of that very, very well, in fact too well. They call me loud mouth. The listening part does not comes so easy. But we must communicate, because if we are not communicating what you say may not be what I heard and the outcome may not be what either of us wants. It is real important. You can misqueue when you don't communicate.

We do a lot of our safety programs that way. Everybody is talking and nobody is understanding what the other feilow really has in mind and we need actually to communicate if we are going to get the job done. I want you to carry this thing home with you, what you think you are. Say it with me like that one time will you? What you think you are. Now, don't you like that better than, WHAT YOU THINK YOU ARE?!?!?! Or what you think you are. Think how many ways you can say that and how many of the ways would irritate somebody. What you. It depends on how we say what we say if we are going to communicate and this is particularly true if we put it in writing. Somehow or another there is no way that we can punctuate a sentence in such a way that we can get the inflection of our voice and the gyrations and the gestures that we make and put it across always like we can in a one-to-one situation. But if our mind is on one thing and our voice is on another thing we probably shouldn't have been there anyway. We must communicate and we must communicate those things that are extremely important and those things that can be understood.

Sometimes we just don't remember some of the things that we ought to say about some of the things that we ought to be talking about and we need to do that. People don't understand that we don't understand them and everybody hates everybody instead of loving everybody. Actually, let's keep it simple. Let's keep it simple and remember what you think you are in all seriousness and I hate to lay any words like that on you at this hour of the morning. But in all seriousness the Bible says, "As a man thinketh in his heart, so is he." So I'm telling you that I believe what you think you are. What do you think about me? Don't tell me. Don't tell me. It probably will result in causing me to think what I do about you. What are you going to lay on me this morning a nice smile, or are you going to put one of those I hate everybody you know sourpussitis. What we think we are. And let me say this, you know the sad part is that nine out of ten people who get fired today, will not lose their job because they do not have the technical skill, nor because they do not have the physical ability, nor because they do not have the mental acuity to do the job, they lose that job because of a foul attitude. What you think you are. Attitude.

The most important ingredient you put in anybody's thinking cap and you better let that little bee buzz in your head because it is vitally important: What you think you are.

How many of you know people that are happy every day? How are you doing? Just fine. How are you doing? Great and getting better all the time. Do you enjoy being around a fellow like that? Yes you do. How do you like to be around a sweet little old lady that I've known nearly all my life. How are you getting along? Oh, I tell you it's like this and it's getting worse all the time. And you know thirty minutes later she's still telling about how her case is worse than anybody's. Consequently, she is on my case, I go all the way around Joneses' to miss her every time I can because I don't want to hear that sad story about how much worse off she is than somebody else. But, she's got it in her head she is physically ill. Everybody else knows she is mentally ill. What you think you are. If you have a good attitude, you can reach a high altitude. If you have a poor attitude, you are going to be on the skids all the way through. You must be ieve that every job is improvable. How can you be in education and not believe that? Every job is improvable. Why would you take a child in kindergarten and shoot them towards the twelfth grade if you did not think they were improvable?

When we start somebody on a road, let's understand that by the day and the hour the road can get better, by the day and the hour the person can be better on that job. If I didn't believe that I could learn something here from observing this convention, I wouldn't be here. You are not going to learn much from me except that I do run off at the mouth quite a bit but you had probably heard that anyway. But if we're a mind to learn, if we are a mind to improve, we can improve.

When I was a classroom teacher I kept a little plaque on the chalkboard, up in the room near my desk that said, "As long as you're green, you grow, but when you get ripe you begin to rot." We don't have to know everything about everything in order to get some experiences and be worthwhile.

A lot of things are confusing in our daily walk of life, but there is an answer and you folks are doing something that will bring the solution to the problem, by getting the people who have the supplies and equipment, the chemicals and the technical knowledge together with people who have the problem. Let me say this to you, don't cure your problem like a custodian in south Arkansas did a few years ago. I walked in the schoolhouse and I could tell where the indoor plumbing department was by the effluvia that were coming up profusely. The superintendent said, "Where do you want to start?" I said, "This will be a good place." I just stuck my head in the door and said, "Whew!" My eyes were watering and they were already bloodshot from the night before and I didn't want it to get any worse so we backed up and I said, "How often do you clean this restroom?" He said, "About once a week." I wanted to say, "ONCE A WEEK!!", but I said, "How often?" He said, "Well, nearly every week." I said, "Why do you look after it so carefully?" He said, "Well, I had that thing spit shined before school, them children come in there the first day and messed it up, so there ain't no need to clean it up." That actually happened.

You have to realize that the secret to success is not just here and now. The secret to success is doing it again tomorrow. We could make a big drive anytime we want to and put a big splash on and get something done today, but the real tough task is doing it again tomorrow. Unless we think safe, we won't work safe.

I have a little trouble once in awhile selling a lineworker out in a school the notion that he ought to damp mop half of a corridor at a time instead of the whole thing. You ever have that problem? The simple fact that he's damp mopping over here will automatically, whether he puts a sign up like he should or not, whether he stretches the string or not, people hardly ever run over a custodian and a bucket you know. They will walk around a little. But if he is taking that nine foot stroke like I do and I'm doing the figure eight, it gets the whole thing, and there's no place to walk but in that fresh mopped floor. We must think harder and not work harder. We must think better in order to do better. You have to want to in order to get to, and if you don't get your want to fixed, you are in the wrong business.

If you think there is not going to be a challenge for you tomorrow, how many times have you thought it's all happened to me. I've heard everything now. Did you ever have the experience that I saw in a cartoon a few years ago where a maintenance man was standing on about a four step drop in a basement in the boiler room, water was spurting out of what looked like a four inch pipe, he had a twenty-four inch wrench in one hand and an eighteen in the other, water up to his knees, little third grade boy standing up on the top step and said, "Mr. Smith, hurry up, Ms. Jones pencil sharpener is broken and she wants it fixed right now." Isn't that frustrating? It happens.

Who calls the shots? What is the chain of command? How about your organizational set-up? Do all of your people know what their job is? You would be surprised at the number of people who quit school business because they can't find out what their job is. They may have been told something, they may have read in the policies and procedures book that this job description is this, but they do everything in the world but that. You have a man assigned to a specific job and then you have him do utility work all the time. He doesn't know if he is a flunkee or just flunked. We need to know where we are and we need to know where we want to go and then we need to concentrate on how to get there. What you think you are. What you think you are.

Do you realize that the experts tell us that we give only 10% of our maximum potential to our employer? Do you believe that? Seven percent some say, seven to ten percent. Did you ever bog down trying to write a report? As long as I had on trying to get a prepared statement to send to Bob before I came here I couldn't even decide on a subject until after I got up here and sat down and somebody queued me in a little bit. At the last minute when it has got to happen you can get down there and do two weeks work in just a few minutes. What you think you are. When you put your mind to it, you can get your heart on it, you can get your hand to it and you can get some results from it. What you think you are. None of this What YOU think you are.

Let me tell you one other thing that plagues people in our business, the personal-pronounitis. I, me and my. If you want me to puke just lay that on me will you? Personal-pronounitis. Let's admit that this world is about us and we are about the world and you know the real successful leader in school plant management or in any other endeavor is the fellow or the gal who has the ability to make Bob think he thought of it. Just plant a little seed here and there and let somebody else think that they said let's do this first. The important thing is to get the job done.

The team approach to good housekeeping is the way we work in Arkansas. Two or three of us do, out of 372 school districts. Seriously, we say that it is utterly impossible, the formula in my handbook says that one custodian should be able to look after 235 students on 13,000 square feet of floor space, after nine teachers and 11 classroom equivalents. And then we point out the fact that there ain't no way for one individual to look after 235 youngins. Especially if there are nine teachers thrown in, and 11 rooms and 13,000 square feet of floor space, there is just no way it can happen without a little bit of cooperation.

We are in this together. And what we think about, what can happen will get it.

In closing, here is a typical school. You've always got one that you try to get a spray buffing and a damp mopping program started so we don't have to strip floors every Thanksgiving and Christmas holiday and may not have to strip them. We have a school in Little Rock that hasn't been stripped in twenty-four years and it looks as good as any in town, because of the process and the technique that's being used and we say, "You've got so much to do during your holidays that you don't get to do other times, let's do that." So, we get a program started and a fellow has X number of rooms, we get him to spray buff a half of four or five rooms each afternoon. Students move all the chairs over to the wall, the next afternoon they move them over the other way and he does the other half and he gets around every week or two weeks however often he can. You've got one person saying, "My students don't come here to move furniture, they come here to have the jewels of wisdom dropping from my mouth falling on their eardrums and making them intellectual." They don't say it like that. Let her alone and in about two months she'll be begging, "Now, why don't you do my floors like that?" "Well, we can't move the furniture and your students can't move the furniture; we are sure sorry about that. We'd like to put you . program, but we can't do it because the chairs are in the way." "Well, I guess we could move them." It's a team approach. You can get it done. Don't believe it can't happen. Don't say it can't be done, some fool will come along and do it. And you and I might just as well be the fools that dare to do, believe it can happen and be successful by doing it again tomorrow and doing it again tomorrow and doing it again tomorrow.

DESIGNING NEW BUILDINGS FOR SAFETY

The Dark Side of New Buildings

John Reid, Architect
Reid-Cunningham-Duncan

Any problems with buildings are the school superintendents fault, not the architects. We'll build on that.

I'm going to just go over some brief things and I'm going to give you some things that have happened safety-wise over the years in Oklahoma. I've been up and down the road from Battiest to Felt and I've seen a few things happen and I would like to just tell you about them.

When you talk about safety, you are talking about the dark side of the new building. A new building is supposed to be smooth and something of pride and something that saves the taxpayers money and it saves on energy and it is just wonderful. When you use the word safety, that's a nice word to mean that somebody might get hurt. Generally speaking, I think that the procedure to take to avoid that is, if possible, hire an architect. Secondly, follow Murphy's Law. If something can go wrong it will.

I would like to just give you a few examples that have happened in Oklahoma to kind of give you how these things have gone wrong and they will. We had a school at Morris, Oklahoma and we let the construction contract and as usual the budget was kind of tight and they didn't have quite enough money to put into the air-conditioning system. During the course of the construction, the school superintendent went to the contractor and said now we've scraped up a little money and we would like to put the air-conditioning system in, but don't tell the architect because we want to save his 6% fee and there is no use, it's all right there, just go ahead and put it in and don't say anything. About two or three years later a little girl was playing in the school yard and these air-conditioner condensers were sitting outside the window and they had a little wall on the front of them so it would kind of hide them and she went up and pulled on the wall. The wall fell over and crushed her foot. Here came a lawsuit suing John Reid for $100,000. I got into it and dug into the papers and said well, "According to our records, there's no air-conditioner there." That's the way it ended up. The Judge got ahold of it and said, "You mean to tell me he wasn't paid anything. He wasn't involved in any way and you're suing him? There's got to be some other reason." That's what finally came out. They went around the usual system.

Another example of somebody getting hurt, I'm laying it off on myself here on a lot of this, we had a school at Hennessey and they drilled some pier holes out for the foundations and they were in the middle of this and some boys were out there playing one night and one of the boys fell in the pier hole. I guess the other boys thought he went on home or something and they left him. It was very cold that night and the next morning here came the drillers to drill their holes again and a man hooked a drilling machine up to a hole and was getting ready to drill and he looked and he heard some crying in the hole. He pulled the boy out. I'll give you about three more and then give you some sort of pattern on what we can do.

This is just about a building. We had a little building gymnasium at Battiest. They had us draw the plans for the gymnasium and they said now we can't get satisfactory contractors, we'll build it ourselves. I got a call about halfway through the building program and the superintendent says we've got serious problems. I said what's the matter. He said we had a terrible rain last night and the gymnasium floor has sunk two feet. That was a case where there was a basement at one end so they would have some shops underneath the stage which was also at the end of the gym and had they poured the basement first and the gym floor second everything would have been alright. But they poured the gym floor first then when they had the big rain, the dirt went out from under the floor.

Another example of where somebody got hurt: we had a boy go in a custodians outdoor closet where he keeps the lawnmowers and soforth at Medford. He climbed up above the wall and climbed into the attic, an attic just like this. The only thing was the attic was over a concrete stair that went to the basement. Of course he fell through and hurt himself pretty bad on those concrete steps.

During construction is a very dangerous time. At Guymon, Oklahoma during construction a man picked up a piece of sheet metal and it acted just like a sail and it blew him off of the roof and if I'm not mistaken, it broke a man's leg and killed another.

I guess what I'm trying to point out is if you have an architect, you can still get hurt. What you do, I'm going to just speculate here and this is just my theory, that the safest and best thing to do is to follow tradition. In other words, you get an architect and you tell him what you want. The owner tells you what to do and the architect describes the building and the contractor builds it and the owner moves back into it and operates it. Almost always whenever something goes wrong, there is some deviation from the tra-

ditional, worked out pattern. For example, when the big walkway failure happened in Kansas City, my understanding is the owner decided to enter into the contracting process. Kind of like at Battiest when they couldn't get a contractor, they decided to build it by force account. To me it's kind of like a basketball game. You are playing the safety game. When you play basketball, you want trained personnel. You want the boys out there who have practiced. I think it's the same way with the safety game. Try to deal with experienced personnel.

You hire an architect, what do you tell the architect about safety? Really you shouldn't have to tell him anything, because he should be somewhat like a waiter who comes up to your table at a restaurant and he says now we've got this and this and which would you like? The architect should say well do you want to have protection against tornadoes in your new design? We've built enough buildings that we've finally had a direct hit on an elementary school at Edmond. Fortunately, had any children been in it they would have been safe due to the design of the building. We had a split level with some upper classrooms and lower classrooms and halfway underground and those in those lower grades would have been safe. When a tornado hits a building it's quite a thing. Probably the safest part of the building is the roofedge. That roof edge has kind of a plywood or even less than that ceiling or facing or something and when that tornado hits it it goes through that and goes into the attic and explodes and if there is any glass in the building or all that metal work, what happened to ours was it was just all over the place. Unless you are under a basement or floor or something, you'll probably have trouble. This tornado hit it so hard that mechanical units as big as this table that were on the roof were just thrown out in the yard. It was really a direct hit. The question is do you want tornado protection? I think you can get it without having an entirely separate tornado shelter. It can be built into the design of your building.

Another thing that might be mentioned is sloped roofs. One thing that happens is if you have a lot of rain, if you have a lot of freezing the water pipes in the roof system freeze, they get frozen so the water can't get off or the snow builds up. If you have a sloped roof, some of the water is drained away or the snow is maybe blown away. If you will look at a lot of schools in Oklahoma, you have places where weight can accumulate and we have had some roof failures in Oklahoma. I don't believe a roof has fallen on anybody, but there have been some bad failures.

Another thing that I think is good that is going on now is they are putting sprinkler systems in buildings. I believe right now the code calls for sprinklers in the custodian room, I know this is the case in a federal building, not necessarily in the classrooms if you have exit doors to the classrooms. But, that's just talking about saving lives. There is such a thing as arson. It seems to me that a sprinkler system even in classrooms with doors is a practical thing considering the possibility of arson.

Vandalism is something that most school people know a lot more about than the architects. It is certainly something that should be discussed and listened to.

A touchy thing of course is the electrical and mechanical systems. Generally speaking, I think it is not a bad idea for school superintendents to say look, we want it simple, no matter what the engineers say we want it simple. We want it so we can fix it and run it. It's kind of a bad thing to be way out at the edge of the state and have a control system that you have to have a lot of training to run and worst of all to have it fixed. An engineer will say oh well you've got a lot of inefficiency here because you've got two tons in every room and you need one and three quarters tons and so by having a central unit that's just the right thing for your total we can save you all these quarters of a ton all over your building. That's a lot of bologney. You can heat and air-condition a classroom with a system that is more complicated than the furnace in your house. In fact a lot of schools in Oklahoma do. You can go to others and some of ours and they are big boilers and controls and dials and everything all over the place.

Now there is another thing that happens here. Even if you hire the best architect, you don't get, unless you make special arrangements, fulltime supervision. That's very hard to do. Even if you've got fulltime supervision, how can a man stand at one end of the building and watch the brickwork while another man is putting the plumbing in another part of the building and another man is doing such-in-such. There is no such thing as total supervision. It's just impossible.

I would say, generally speaking, the more you get the better. And it doesn't hurt to walk out there and look around. For instance, these light fixtures that are over our ceiling were hung up there by probably fairly inexperienced workers who were paid by the job to get it done as quickly as possible. We've had light fixtures fall out of the ceiling. The only way you are going to do it is to test each one.

Be suspicious. This is my Murphy's Law. There is a ghost in every design. There is something going to go wrong. I've been around construction for about 200 buildings and there is always a ghost, whatever. There is no such thing as a perfect set of plans, a perfect human being, the contractor, or a perfect school board or superintendent or whatever. Watch out for a few little obvious things, even in new buildings.

Watch out for cracks in the walls. Watch out for anything that's hot, that includes not just boilers but hot transformers, hot motors. For example, we built a new Methodist Church at Elk City because of the fact that the little motor that somehow runs the organ pipes was in the attic and it hadn't been oiled in twelve years, so it burnt the whole church to the ground. Pay a lot of attention to vandalism. We had a situation where we had tunnels connecting to all the buildings on campus and had pneumatic tubes in there that went to the air-conditioning control system and somebody got in there and took a pin and pin-pricked these tubes and it took them one year to find out why the air-conditioner kept coming on. Vandalism can be pretty sly sometimes.

We had another one where some kids got on a roof and filled up all the vent stacks with roof gravel. Everybody has had it. Of course the most destructive thing, it's not that harmful but it is a mess, that's a spray can of paint.

Why does an architect make mistakes? In defense of the architects, we probably deal with 25,000 products, there's a complexity in the building program, everything out there is being built by the lowest bidder who is trying to save some money. There are lots and lots of reasons, and an architect is going to do his best but he's not a witch doctor, there is still evil out there.

Why does an owner break tradition and not use architects and not use contractors? It's very simple, money. It's a very expensive thing and you try to save all the money you can.

The sum of it all in my opinion is as much as you can, use trained personnel.

DESIGNING SAFE SCHOOL FACILITIES

Remodeling Classrooms for Safety

Dave Brown, Architect
Meyer-Brown

My part of the program today deals with remodeling and renovation of schools and school projects. Really there are about three areas that I'm going to try to hit on. Remodel jobs are very complicated. It looks very simple when you first start into it and it's very difficult for a school board to make the decision between when to build a new school and when to remodel the old one. A kind of rule of thumb that we've used for years and we picked it up from John, is it cost about 50% of the total cost of the new building and you realiy ought to think seriously about not remodeling a building. And the reason I say that, it's not that initial cost that you are going to pay for down the road, if the building is an old structure, you are going to have to put up with some problems with it down the road that you might not necessarily have to with a new structure.

The first thing that I would like to talk about is fire safety in remodeling buildings. Talking with the State Fire Marshal's Office and visiting with them in Oklahoma in the last two years about 16 different school buildings have experienced some sort of fire. Most of these have been older structures. One of the primary causes is the electrical systems. Most of the buildings we are remodeling now are late 40's early 50's buildings. The state building codes have changed six times since most of those buildings were built. Needless to say the electrical systems are potential fire problems. One thing that is happening to us is if you will look around your schools today and go into one of the rooms and count the number of calculators, typewriters, look at all the things that are using electricity. If you are going to remodel the building, if you didn't remodel your electrical system at the same time, and I'm talking about from the transformers out on the poles all the way in, you need to seriously look at the kind of load you are putting on that building. I would venture to say that if you didn't do your electrical system over you might have a potential problem. Think back 20 or 25 years ago when that building was probably built or 30 years ago we didn't use electric typewriters or electric calculators. There were very few pieces of equipment like that.

When you are remodeling a building one of the first things that comes up with an architectural firm, and incidentally I like the theme of John's talk of hiring an architect I'm always in favor of hiring architects especially if it's a firm that I know of. When you are remodeling new buildings, one of the first things you get into and one of the things that we have to do by the state law, and when I say we I am including the school districts, the school superintendents, and everyone is by law required, to turn those drawings into the State Fire Marshal's Office for approval. The only exception, and I think that was changed this year, that is your town has an adopted building code and has a fire marshal or someone to check the plans that is the only exception. In remodeled buildings, fire is probably the worst disaster that can hit it. If you look at the building, it has got a lot of wood products in it. Usually with wood structures you are going to get into a sprinkler system, you can figure about a dollar per square foot for sprinklers.

The other items that come up very quickly are the exit requirements. How do you get out of the building? If it's an old structure, more than likely the building is not going to meet code according to the exit, so you are going to have to do something else there to deal with that. Probably one of the worst things that I see happen, and it's not necessarily the superintendents fault, I see a lot of architects do it in remodeling buildings, that's the improper use of materials, new materials. Several materials that will get you in trouble very quickly in a remodel job with the fire marshal's office is using wood paneling inside that school. If it's not fire rated, it's illegal. Fiber board tiles and panels of any kind, any wood products you have to be very careful about how much you use. Wood trims and things there are percentages of how much you can use of how much of a wall it covers and all this. But mostly wood products you have to be extremely careful about.

The other is use of carpeting. The ones that always cause the big controversy are the ones that have rubber bases, rubber cushion base. Make sure that the fire marshal will approve that carpet before you put it in. Probably one of the uses of carpet that I see mostly and the fire marshal goes right through the roof when he sees it, is putting carpet on the walls. You can take a class A fire rated carpet and lay it on the floor and you don't have any problems. The minute you put it on the wall, it's not fire tested. The UL people have not fire tested vertical carpet, so the fire marshal will not let you use it.

One of the things they are doing and this gets down in the old materials area, is if you'll notice and I'm sure a lot of the schools have already been visited by people from the state fire marshal's office when we

went through the asbestos thing two years ago with inspections and they are still doing some of that, the other is the use of, back in the late 40's and early 50's, they used a lot of wood fiber tile instead of the lay-in tile; there was a wood fiber tile that glued directly to the structure. This year it is mandatory you get rid of it. They are doing spot inspections on it.

Right now we are looking into the possibility of applying an over sprayed material over that, because it is very expensive to remove especially if you have already come in and lowered the ceilings and rather than tear all that out, you just lowered the ceilings and left it up there. The state inspector does take a ladder with him and he does take the tile out and he does look. Again that is a spot check, I don't know if they have hit everybody. They have demonstrated that with the material once it hits open flame will go up just like a match stick. It's probably 30 years old and dried out and it will go very quickly.

Kind of winding up the fire safety part of this, I think if I had any recommendations to make to a school system and to superintendents or to anyone involved in remodeling work, think before you start and I am not necessarily saying hire an architect to do it; the laws are very explicit about schools about when you have to hire an architect or have a stamp on those drawings. One of the first things you really need to do is sit down even if it is a written out description of what you want to do, call the State Department of Education, talk to them about it. Call the State Fire Marshal's Office, they've got about six people over there who know quite a lot about construction. They can tell you very quickly if you are going down the right path. Don't just start. That's the obvious thing to do is say we would like to drop the ceilings in here and put some new carpet on the floor and by the way we need some more acoustical absorption in here so lets turn it up to six feet on the wall. I think that once the fire marshal starts doing the inspections again, he will probably get back into the carpet thing and they'll have to get it down very quickly.

One of the other areas that I would like to talk about, and John touched on it very briefly, is tornadoes and high wind protection in existing building. It is probably one of the most difficult things in the world to do and in Oklahoma most of our tornadoes, about 85% of them, come out of the southwest. Incidentally, most of the schools have most of their glass on the southwest, south and west. So, once you have a glass faced building, you've got an immediate problem with tornadoes. You've heard different theories about what happens to glass when a tornado goes by. We always thought that it blew the glass out. It does but it depends on which side of the building it's on. On the side it hits it will blow it in, on the leeward side it will blow it out. There is no set definition. What you have to do is avoid the glass. What you do, you look for an interior space on a remodeled building and this is the space you try to build up as far as the protection. It doesn't take a very large space to get a lot of people in. It takes about five to six square foot per person. You can take, if you've got an interior classroom, something that's inside, this is the space you want to convert to a storm protected area. I get very nervous about saying something is tornado proof, with the exception of one or two buildings done in the state, very few could take a direct hit from a tornado. It would almost have to be underground. I am not saying it wouldn't survive, but it is a very powerful force. To give you an idea, tornadoes normally travel 25 to 40 miles an hour, their rotational velocity is about 110. That doesn't sound like very much until you figure out that out on the end of a tornado, on the outside path of it, which comes in contact with the building first, if the rotational part of the tornado is 110 it's 450 out on the edges. You can imagine what can happen to a building. There is really only one thing you can do, I think, to protect yourself once you are into a remodeling project as far as tornadoes are concerned and that is to survey the building and incidentally, that means inside and outside, the biggest damage from tornadoes are not direct hits. It's where a tornado passes close to the building and changes the pressures around the building and the building most of the time literally explodes inside out. The first thing that happens to a building during a tornado, the major cause of damage is high winds, it's not necessarily the tornado touching the building itself. The next is the tornado picks up missiles and this can vary from a swingset to a ford pick-up truck. The one that hit in Ohio last year picked up a school bus and put it on the stage. These things are extremely powerful.

What I would do outside is look around the building and look for things that would become potential missiles during a tornado or high wind and avoid selecting a space that's near those. The other thing that you have to be extremely careful of is where the electrical service comes into the building. You don't want to be near that during a tornado. If it comes loose and explodes, then you have a fire potential that you are going to be fairly close to. The other thing you watch for is if you are in a room on the north side, make sure that the building to your southwest is not taller than you are, because most likely it is going to shove it over on you. You do your survey outside and try to come up with a space that you think will be reasonably safe.

Inside when you start looking for these spaces, your first reaction, I think was that you can get a lot of people in a gymnasium or you can get a lot of people in the cafeteria. That is probably the worst possible space you can get into, because of its length span. You want to get into something that has walls as close as

possible. In other words, short span places. If we were doing a new building and most of the new buildings are steel frame construction which is excellent for tornado protection if you have to be above the ground, unfortunately most of the buildings done in the 40's and 50's which you are probably going to be remodeling have loadbearing walls which is one of the worst to deal with, because usually the walls cave in first and then the natural thing is for the roof to come down on top of you.

The other damage you have to watch out for in tornadoes is, there is an effect called wind tunnelling that basically takes a corridor by the wind literally coming into the building; that thing would come just like a wind tunnel and pick up velocity as it goes through. In Oklahoma a general rule is you don't put people in a corridor that's oriented north-south, always try to go perpendicular to the path of the tornado to prevent some of this.

Also, in an interior space try to stay away from glass as much as possible; that includes skylights. The skylight will be the first thing to leave you when the tornado hits, it will go right straight up.

The third and last part that really doesn't have anything to do with the remodeling itself but it's the kind of things you need to be thinking about. I always try to look at the major thing that can happen to the building as far as a potential problem, and I still say the electrical system, I'm assuming now that the structure is good because I'm hoping that you've analyzed the structure enough to not spend a lot of money on something that is going to cause you some problems later on. Dealing with the electrical system, plumbing systems are usually the only safety part there is if you get into problems with old plumbing you might cause a few problems with kids getting sick, once you start disrupting this thing, so you ought to look at replacing the electrical first, then the plumbing and of course more than likely you are going to put in a new heating and cooling system. Once you do that, you are putting another strain on your electrical system, so you need to make sure that's right. I think the other part is, once the building has been remodeled our natural reaction is to say this thing is good as new and it's not going to cause any problems. That's not quite true. The building is an old building that you basically remodeled and it needs continuous regular maintenance and inspections and if at all possible, if you can afford it, do set up a schedule with plumbers or electricians or whatever. Always compare remodeling to replacing a patient's heart, because in effect that's what we are doing. When a person gets a heart transplant and he walks out of the hospital he's not through, he's got a lot of check-ups and monitoring and he needs continuous close attention.

INSPECTION AGENCIES: THEIR ROLE AND RESPONSIBILITY

Roy Kelley
State Fire Marshal's Office

Our responsibilities as established by state statutes includes a number of things, one of them being investigating fires. That's probably our big role. Determine the cause and if the evidence warrants, we assist the prosecuting attorney in filing and prosecuting in the case of arson or attempted fraud or even attempted arson. You would be surprised how many cases we file dealing with fraud. They attempt to burn down one of these facilities to collect the insurance and there is always some enterprising young man from the State Fire Marshal's Office that disagrees with them and every once in a while we get one in court and have a little fun with that.

We also wear another hat and that is that we are, by state statute, empowered to inspect buildings and I'm using the broad term buildings because that's exactly what it covers, all kinds and types of buildings or any complaint from anybody. On these we go in and determine that the building is unsafe, we work with the local authorities. We have to do that because Mr. Sanders a lot of times is called on as a referee. If the person that owns the property decides it's not as bad as we say it is and he wants a hearing then Mr. Sanders has a hearing and they make a determination. We also include repairing of the building, bringing it up to code or making it safe to live in. Let me give you an example of what I'm talking about. Several years ago one of our agents went in to inspect a facility that we had had a complaint on and he wrote it up and the person that owned the building disagreed while they were having the hearing. They had the hearing in that community. Mr. Sanders made a trip up there and he had his representatives, the owner had representatives and they were in a meeting discussing the building when the back wall fell out of it. That's what I mean by a lot of times we go into these things and people don't think they are as bad as they are.

Probably one of our big jobs is inspecting state facilities. When I'm talking about state facilities, I'm talking about everything from the State Capitol Building out on N.E. 23rd to the smallest state building that is owned and operated by the State of Oklahoma. We make an attempt to inspect all of them. I want to qualify an attempt because we only have 15 men in the field. We have two permanent residents at Tulsa, one at Vian, one at Poteau, one at Walters, one at Elk City and one at Enid. Then of course we have agents here in Oklahoma City. We have 15 field agents to do all this work.

Now, by State Statutes they established the State Fire Marshal's Commission which is authorized and empowered and it shall be their duty to prescribe, adopt and promulgate such reasonable rules and regulations and specifications consistent with nationally recognized codes, standards or practices on matters relating to safeguarding of life or property from the hazards of fire and explosions.

Here's what I'm talking about. We have two bibles the Life Safety Code 1981 Edition and the recently adopted Bulka Building Code 1981 Edition, this was adopted in January of this year. Also I have with me and I did not bring enough copies listing all the codes that the State Fire Marshal's Commission has adopted and/or updated. The first life safety code adopted was the 1967 edition. Every time the National Fire Protection Association updates this, our commission, following procedures, updates the life safey code. This is the list that our office has adopted and that we enforce.

Let's translate this down where most of us can understand it. Any city, town or community that has adopted their own codes, if they have a building code, we are not really particular what it is, as long as it is a nationally recognized code we let them enforce their code. The only place that we come in is in the communities that do not have a code or anyplace outside of a community, even though the nearest community has a code. Any rural area, then we use the 1981 Edition of the Life Safety Code and the 1981 Edition of the Building Code.

We want to work with you and for you. Part of our services and probably one of the largest things that we provide in our state office as far as you people are concerned is the examination of plans. This is free. Sometimes now, an architect brings a set of plans in here to build a new school or to remodel one or enlarge one or something like that, sometimes they don't like what we tell them. We have a plans review man in our office and this is 90% of his job and he looks at a lot of plans, not only building plans but sprinkling plans and it's surprising how many more buildings are getting sprinklers today than used to be. We interpret the codes. We work with you.

In conclusion, I want to leave you with a little bit of a message. Complacency can be dangerous to your health and all that are around you. Your school plant, no matter how new it may be, is not immune from accidents including fire and explosion. It is physically impossible for the State Fire Marshal's Office to inspect your schools regularly. You must not assume that since you have not received a report telling you

otherwise your school is A-OK. Do not hesitate to ask for help. This is what we are for. We actually work for you people, just like you people work for your local people. Don't hesitate. We may not be able to get there the day you call, but we will get there, we will have worked with you and we will try to assist you in every way we can.

INSPECTION AGENCIES: THEIR

ROLE AND RESPONSIBILITY

Dwain Farley
State Health Department

I. Introduction
   A. It is imperative that our school children be provided a safe, wholesome environment.
   B. Although the State Health Department is primarily an enforcement agency, we have historically worked to solve and prevent problems rather than merely abate them.

II. Primary areas of Health Department responsibility – Inspection forms are available from the State Health Department.
   A. Food Service
      1. All school food service will be licensed – no fee
      2. Critical items for consideration
         – safe sources of food
         – maintain safe temperatures (both hot and cold)
         – no re-service of hazardous food
         – no food service personnel with infectious diseases
         – adequate cleaning and sanitization of food service utensils
         – adequate plumbing: no back siphonage or cross-connections
         – adequate insect, rodent, and animal control
         – necessary toxic items properly stored, labeled, and used
   B. Water Supply
      1. City source – no inspection
      2. Individual source
         – location
         – construction
         – casing
         – cover, pump, storage
   C. Sewage Disposal
      1. City service – no specific inspection
   D. Solid Waste Disposal
      1. City service – meet city ordinance
      2. Individual solid waste disposal system
         – adequate roads
         – blowing litter
         – depth of cells
         – daily cover
         – vector, dust, drainage control
   E. Swimming pools
         – sanitation
         – safety – rounded corners, chlorine isolated, safe gutters
         – toilet facilities adequate
         – adequate construction and finish – impervious finishes
         – design – pumps, hair catcher, filters, adjustable inlets
         – equipment – chlorine and pH testers, life saving equipment
   F. Toilet Facilities (specific regulations being worked on)
         – clean and in good repair
         – adequate lighting, outside ventilation
         – handwashing facilities
   G. Buildings, Grounds Play Equipment
      1. This item is being re-evaluated for more clear interpretation
      2. General items for consideration
         – grounds free of trash, weeds, rodents, insect breeding areas
         – obvious accident hazards

- animals in classrooms – adequate care
- laboratory safety
- electrical safety

III. Other Areas of Concern

A. Hazardous Chemicals

- inventory (in process through OSDH and Dept. of Education)
- local disposal
- permitted hazardous waste site disposal
- carcinogen or safety risk disposal

B. Hot Water Heater/Boilers – handled through Department of Labor

IV. Conclusions

A. Varied agency and local school responsibility

- things may be confusing to local school officials
- spirit of cooperation not antagonism
- if no major problems, it may appear that agency personnel are "nit-picking" at minor problems.

B. Safety and sanitation in schools is a necessity.

INSPECTION AGENCIES: THEIR

ROLE AND RESPONSIBILITY

Mark A. Taylor
Department of Labor

The Labor Department derives it's jurisdiction to inspect public schools in Oklahoma under the Oklahoma Health and Safety Standards Act of 1970. This act is found under the Title 40 Sections 401-423.

The legislature adopted the federal register (1910 General Industry Standards) as its 'bible'.

The legislative intent was to require that any state, county, or municipal government "shall establish and maintain conditions of work which are reasonably safe and healthful for employees."

The normal procedure for inspecting a school goes something like this:

1. The school will receive notification by mail that their facility is to be inspected during the course of the following week.
2. Our inspector first contacts, in person, either the superintendent or principal. He will at that time conduct an opening conference which is intended to outline the intent and purpose of the inspection, plus answer any questions.
3. The inspector will secure a "walk-around" contact (appointed by the school official) and proceed with the inspection.
4. At the conclusion of the inspection, the inspector, "walk-around" contact, and school official will conduct a "closing conference." Violations found, if any, will be pointed out and discussed.

Our office will furnish a typewritten copy of our inspectors findings. Within "a reasonable amount of time," the school should respond (on form supplied) as to the status of corrections made or being made.

Taylor emphasized that while the program is by law defined as enforcement, the intent of the Labor Department is to provide the school the expertise and education necessary to make the facilities safe for employees and students.

The inspector is there to provide a service. If the Labor Department can assist the school system within the scope of our knowledge, we will do so.

AN INSPECTION PROGRAM FOR YOUR SCHOOL

John Cowan
Ardmore Public Schools

In the July, 1980 meeting, Bob Martin gave the following description of a School Plant Manager. "Today the school plant manager is entrusted with what is usually the communities largest investment – its school facility. But the responsibility doesn't stop with the care of the physical plant; it includes the health, safety and comfort of all of those who use the facility. The school plant manager is responsible for setting standards of cleanliness and neatness that pupils will be influenced to adopt. Well kept buildings and grounds contribute to the pupil's pride in his school and help teach good habits in the care and use of public property. He is responsible, in part, for working to make persons more comfortable and contented. He is responsible for effecting economics in operation by preventing conditions in the needless waste or careless use of supplies, equipment, water and fuel. He is a custodian, a maintenance man, an engineer, an architect, a financial wizard. He must be able to work with the well educated as well as the functional illiterate. He must be a good public relations man, he must believe in himself and the job he does. He must be all of these and more. It takes a little knowledge about a lot of things to be a successful school plant manager."

What Bob said was true. It is being so versatile that we get in trouble. We get so busy in covering so many areas that we tend to overlook many day-to-day functions and we take them for granted. Many times we are pushed into spending all of our time and energy in areas that are public oriented. I am not saying this to give a blanket excuse for overlooking safety precautions. The school plant manager will have to take a stand and see that he covers the safety precautions of his building.

The plant manager must put on one more hat and see that his school is following a preventive safety program. This should involve the total school population, the local community, and state agencies.

The manner that each school district goes about solving the problems, will, of course, depend on the individual district. I am sure each district will use bits and pieces from other districts to fill their individual needs. However, there are certain rules that are going to be common to us all. We, as plant managers, must see that they are accomplished.

In Ardmore we looked for help in our system first, then turned to the local community. There will be many factors that will determine the value these people have for your system. Our first task was to enlist all the help we could get. We initiated a program of five steps.

Step 1. Secure the help of custodians, cooks, and building principals.

Step 2. Administration to allow for preventive maintenance and immediate improvements.

Step 3. Capable maintenance people with a set of work rules.

Step 4. Outside help; utility companies, local contractors, architects, City Hall, and private businesses.

Step 5. Follow up program and inspection.

By following these steps, we feel you can have a successful program.

Step 1. Our first step was to get the assistance of the custodians, cooks, and principals. With these people willing to help, we asked that they inspect and report immediately any unusual situations or repairs to the service center. The cooperation of these people has prevented many breakdowns as well as major fires. A simple checklist and encouragement to watch, check, listen and observe is required.

Our custodians meet once a month for safety talks, reviews, and job assignments. They have a monthly checklist that is turned in at the end of the year. Should a problem be found, they either call the service center, or if not an emergency, send a work order to the service center.

A typical list of safety items that require at least a monthly check are: low water cutoffs, fire extinguishers, safety relief, pressure regulators, vents and flues, etc.

The principal along with the custodian makes a check of the building for safe use. This is done each semester and returned to the plant manager. Along with this is a check by our local fire department. This is a specific check, not a part of the fire drills.

Step 2. If your school has a computer or capacity to list all equipment and its nomenclature and when it was serviced, that is great. In our school, we do a simple daily work sheet, which are kept by the servicing-maintenance person. The administration must be willing to allow time and proper help to provide this service.

Step 3. There is no substitute for skilled maintenance employees. We are fortunate in that we have one highly skilled mechanic, two licensed plumbers, one capable electrician, one skilled air-condition repairman, and one skilled in the area of painting and door repair.

The two plumbers share in inspecting monthly the boilers, heaters, hot water tanks and kitchens. They, in turn, repair any breakdown and/or report any defective item. We encourage calls as well as written work

orders. This prevents many times something from becoming a major problem. This does have its drawback. I realize that there are systems that can only afford emergency call ins.

Step 4. There is a wealth of help in the community. We have learned to tap this for as much as possible. Their donation of time and their expertise is a real service. For example, Oklahoma Natural Gas Company helps in a yearly pressure check of all gas lines. We have found them helpful in everything from technical advise to assistance in emergencies. O.G.&E. has been helpful in providing assistance in technical areas of electrical distribution. The City of Ardmore has helped by providing safety regulations of crosswalk and assisting in inspections. The fire department also provides a great service in this area. Do not forget your local businessmen and architects. I have found these people very helpful in providing the latest information. The State Department of Education is also taking a step in the area of building maintenance. I am sure we will see a great deal of help in building review and specifications.

Step 5. This is a good spot for the plant manager or his assistant to see all checks are in. It is a good time for him to visit the sites and see to their safety. Discussions with maintenance, cooks, and custodians will serve as a double check. Whatever form or record is kept, it must be kept ready and available. The record keeping should become a habit. Our follow up involves a great deal of rapport between the maintenance and the building people.

In this area we set goals for ourselves. For example; we had what we called the "boiler rooms clean out." We have been working on this for about six years. You will find this a very difficult job. For, as you know, about the time you get it free of storage, someone always finds more to put in its place. I feel we have accomplished this goal many times to some degree. This is a good example of how a goal can and must be an ever-constant job. I know his goal cannot be completely satisfactory. We know it is a job we will strive for everyday.

The follow-up program must include the help of the administrators and teachers. The follow-up must terminate with the help and encouragement of the school board.

We can take a simple check of our facilities and be surprised at what the possible danger could be. Let us not think for one moment that boilers are the only dangerous bombs. As Bob said the total plant manager must look at a total system and try to find every possible weak link. I find this a very important challenge. It must be a total commitment. The plant manager, however, must do everything possible to set the system right.

He must have a record keeping system that he can live with. It must be a system of inspection that he can maintain in his time frame.

Again, let me emphasize the simplicity of records in our system. They must be easy for maintenance to fill out and convenient for all others involved to understand and return. A sample form for the principals to provide a safety check of the general condition of their building is attached.

I have left one very important step out, that the business we are in is education. With changing technology, we must set aside a time to learn all that we can. Don't let retraining get in the way of false pride. There is a wealth of knowledge out there – USE IT.

I need not remind you that with all this, the plant manager must get improvements that are going to stand the test of time. A school is not a short-term-get-rich-quick business. He is going to have to go after quality equipment and repairs. Too many school boards and school administrators will take the low dollar way out.

We have found that outside help from the business world comes a very sincere desire to see that we get the best for our money. I feel very good in the relationship we have with our business world. Much of this has come by a willingness to open schools to the public and an administration who has established a very firm public relation program to the total community.

Attachment 1

ARDMORE CITY SCHOOL

SAFETY CHECK

Building _____

Date _____

		CIRCLE ONE Unsatisfactory Needs Improvement Satisfactory Excellent
1.	**Classrooms:** Are they free of obstructions or doors that are hazardous to evacuate.	1 2 3 4
2.	**Exit lights:** All lights shall be in working condition.	1 2 3 4
3.	**Vents and Grills:** Free from debris and furniture.	1 2 3 4
4.	**Fire extinguishers:** They are all in good condition and in a visible location.	1 2 3 4
5.	**Custodial Rooms:** They are kept clean and free from being cluttered with custodial materials.	1 2 3 4
6.	**Electrical Panels:** Free from being used as storerooms. They are easily reached.	1 2 3 4
7.	**Boiler rooms:** Low water and relief valves are operable.	1 2 3 4
8.	**Hot water heaters:** Check relief valves and temperature settings (normal). Check flues and vent caps.	1 2 3 4
9.	**Kitchens:** Clean and free of materials that can catch fire.	1 2 3 4
10.	**Vent Hoods:** Ducts and filters free of excess grease.	1 2 3 4
11.	**Storerooms:** Clean and ventilated.	1 2 3 4
12.	**Electrical:** Basic wiring system is working in a safe manner.	1 2 3 4
13.	**Exit doors:** Do they permit free entry and exit in case of emergencies?	1 2 3 4
14.	**Grounds and Crossings:** Are grounds and crossings in as safe condition as possible for everyday use?	1 2 3 4
15.	**Steps and stairways:** Are these areas free from obstructions that would prevent a quick exit from the building.	1 2 3 4

Any specific needs please list below:

_____

_____

_____

_____

(Principal)

_____

(Custodian)

AN INSPECTION PROGRAM FOR YOUR SCHOOL

Charles Head
Ardmore Public Schools

There is very little that I can add to what's required in a good inspection program. I thought I might take the very few remaining minutes and just comment briefly on the results of a good inspection plan.

It is very difficult to quantify in dollars and cents how much has been saved in our school district by being able to have a more safe and more efficiently operative plant. How many accidents have we avoided? You can't measure that. There is one area that we are able to quantify and that is the area of industrial accidents to our employees. We instituted an inspection program, an accident prevention program about four years ago. At that time, our workers compensation insurance had an experience modification factor of 1.1. Those of you that don't work directly with workers compensation let me explain to you what that means.

The rates are set by statute. If you have an employee in a certain category the premiums are going to be the same regardless of where that employee works. However, based upon that employers experience, good or bad, he gets a modifying factor applied to that premium up or down. A 1.1 is a poor modifier. One would be an equal dollar amount. The .1 means we are paying a premium of 10% above what is the statutory premium, or at that time we were, 10% premium to the insurance company because of past poor performance in the industrial area. Today, our experience modifier is .61, which is a very, very low experience modifer. Some of you have one lower, but I personally have never encountered anyone with a lower experience modifier than .61. Our insurance carrier has no one with a lower modifier.

What does that mean in dollars and cents to you and your operation? In 1978-79 with the experience modifier of 1.1 and a much lower payroll than we have now, our premium was $27,234. This current year with an experience modifier of .61 and a payroll that has increased about 30% from that day to this day, our premium is now $24,960 or it is down $2,274 from where it was three years ago, even though our salaries have increased 30%. If we still had today an experience modifier of 1.1 our premium would be about $45,000 or an increase of about $17,000 more than we spent this year.

If we would have had to pull that $17,000 out of John's budget this year to pay the premium there would be no way that he would have done the job he has done.

All of our goal is to provide education to our patrons and to our patron students. Your particular portion of that goal is to help provide a safe, comfortable and efficient environment in which that education can take place. The best inspection plan will only work to help achieve that goal if the managers with yourself in the forefront strive each day, every day and all day to see that that inspection plan is implemented.

ARKANSAS' APPROACH TO SCHOOL SAFETY

Conrad Wells
Arkansas Department of Education

In the school business we sometimes need to find out that maybe it's not as bad as it seems. Especially if we look at statistics. I don't know what that is but when I had the course I felt lucky to get by it.

In Arkansas, from 1969 to 1979, we received a number of school districts, their total economic situation, and we found out that maintenance and operations costs per pupil increased in that ten year span 359%. We found that the maintenance and operation cost per square foot increased from '69 to '79 196 percent. That's the song I'm hearing all over the country. This is serious business. Our economics are telling us that we are going to have to do some things. Everybody is telling us we have to do some things but nobody is telling us where to get the money to do it with.

We all have our job to do and sometimes it's good that we lap over. In Arkansas, we have a man in the Department of Education in my section, School Plant Services, who is our "Safety Man". People cause things to happen. One man, Rudolph Bryant, he cause some beautiful things to happen in Arkansas with reference to safety.

When I visit a school, I'm safety conscious and safety minded and I would see some of the same combustible materials in a schoolhouse that Rudolph Bryant would see and I would write it up in my report. Our coordinator would do the same thing. Our elementary and secondary supervisor of instruction would do the same thing. I don't mean it's a job alone. And, yet sometimes it seems that we are the lone voice in the wilderness crying out for somebody to pay attention.

It's pretty easy to have a spring housecleaning at home or in school or in the business or whatever. It is much more difficult to have the house in order all the time. I have a little difficulty getting people to realize that their cleaning job is not completed until their cleaning apparatuses are clean and stored and organized and ready for use the next day. Sometimes a maintenance man is going to paint some more in just a minute so he leaves bottles of thinner, he leaves a can of paint, he leaves the paint brush, and other hazardous things for just a minute and he doesn't know that there is going to be an emergency on the far end of the campus and it's three hours and a half before he gets back and by then he's forgotten what he is doing. I'm just saying that we are in this thing together and we have to watch out for each other.

I believe the single most effective tool to have fire safety in Arkansas is the fire marshal's program. This booklet tells the story of our safety program. We very meticulously schedule regional training sessions and invite all of the schools that have selected or elected fire marshals to have these two fire marshals to come in and we have experts from the State Fire Marshal's Office or from the local fire station to train the school fire marshals in what to look for, why to look for it and this sort of thing. We require a monthly report and the school fire marshal is supposed to thoroughly inspect the building.

When I was a building principal, I told my boys to sic 'em. If that coach puts any more combustible material in his hot water heater closet room I want to know about it and I want to personally chew him out about it. If the custodian has got some things in the boiler room that ought not be there, I want to know about it. Each time they would give me a written report, we would get it corrected and then they would go back and make another inspection and give me a written report. Why did I do that? Because I thought it was the thing to do. If something had happened as a result of somebody's carelessness and I had these written reports on file, I would have done my job. I would have tried to absolve myself of any liability in case a lawsuit results. And it's a pretty good idea to do that. Let students do what you tell them to do, they'll do you a pretty good job. They look for things. They enjoy finding things like that for you.

I think perhaps the next best thing that happened is the rapport that's established with all other agencies. I'm sure it's true in Arkansas as it is here, that the beginning of building safety is with the designers and the builders in the early planning stage. Somebody said well what kind of fire trap do you want to build? If we design a building that is fire prone, if we design a building that is accident prone, if we design a building that has unsafe features about it, design, specifications and right on down the line, we are going to have these problems. If we will design in materials and specify materials that are cleanable, maintainable, and relatively fire resistent we are going to have a lot more happiness and a lot fewer hazards on down the road. So, we are all in this together.

If the maintenance crew, and the housekeeping crew does the job they are supposed to do with cooperation from the teachers, the students and the administrators a lot of potential hazards will never happen. I go into a school every once in a while and you can see a hundred accidents just begging to happen. Especially fire hazards. How many of you have some dust mops on the job, they are supposed to be dustless mops? How many have seen some dirty mop heads stored in a paste board box in a corner in the boiler

room? That's not the safest thing in the world one can do, is it?

Sometimes we have to be a little dramatic to get a point across. Once in a while we have to show a workman a picture that is the result of a careless act on the part of an employee that can cause a child to have 90% of her body burned. If you have to be a little dramatic sometimes, you have to be a little dramatic. But, there is a way to do it. I believe that most people want to do what is right. Some have to be encouraged more. They ask me if I have any teeth in the laws about safety and I tell them no. They say well, what about your planning program, are the folks required to build the things that you approve? I say no. They say well, how do you get things done? I said, well one member of our staff serves on the loan committee. We never have recommended that the loan committee pass on a loan that did not meet our specifications and it's impressive.

We do not want to be enforcers and inspectors. But, if we can say it would probably be more profitable if you would go this route, they get that message pretty soon. There are statutes and they are spelled out in this book for safety and generally they say that the Department of Education is authorized and required to work cooperatively with various other agencies and in line with the recommendations of the state board of education to bring about the safest conceivable way to do things in a schoolhouse. That's great stuff, but it takes a whole lot of people cooperating almost all the time.

One of the major dangers in your safety program is to go overboard on a thing and leave all the rest of of them on. Not withstanding that you had a failure that caused an explosion and some tragic loss. There are a lot of other things that can happen anywhere and they may happen at anytime. Just do the best job you can with whatever resources are available to you and it will work out all right. You have to be diligent. You have to want to.

Not everything is as it appears to be. What you think you are you are. If you would like a better view of what goes on in Arkansas, I would invite you to ask for one of these little booklets and if you would like to ask any questions feel free.

SCHOOL FACILITIES SURVEY 1981-82

Bob Cornell
RGDC, INC.

I. Summary of Conditions
A. TASKS
1. Review existing program and regulations.
2. Develop inventory instrument
a. RGDC, Inc. – Bob Cornell, AIA/CSI
b. EFL/Austin – Ben Graves, Hon. AIA
3. Perform Pilot Test using Ten (10) Districts (workshop – OKC)
a. Cross section
1. Large
2. Medium
3. Small
4. High evaluation
5. Medium evaluation
6. Poor evaluation
b. Across the State
1. Moore
2. Oakdale
3. Bridge Creek
4. Purcell
5. Mooreland
6. Coweta
7. Gotebo
8. Thackerville
9. Holdenville
10. Poteau
4. From Pilot Test
a. On site checked
100 percent of districts and
100 percent of administrative unit
5. Refined Instrument and Print
6. Training sessions (workshop)
a. Wilburton (southeast)
1. 57 districts invited
a. Seven districts came
b. Lawton (southwest)
1. 60 districts invited
a. 41 came
b. one came from another quadrant
c. Woodward (northwest)
1. 27 districts invited
a. 27 came
b. three came from other quadrant
d. Sapulpa (northeast)
1. 92 districts invited
a. 66 came
b. 10 came from other quadrants
7. We continued the training sessions (workshop) in Oklahoma City for a make-up.
8. Oklahoma City (central make-up)
a. 83 districts invited
1. 20 came
9. Another Oklahoma City (central make-up)
a. 63 districts invited

b. 10 other districts authorized from State Department
    1. 40 came
10. After all six training sessions (workshops)
    a. 265 invited
        1. 238 reported
    b. Seven short for 40%
11. TODAY
    a. 190 districts have sent back surveys
    b. 22 districts will report this week
    c. 22 districts still out
12. Review of on site checking
    a. 117 districts will be checked
        1. we have checked 51.5% as of today
13. This week three teams are out and by April 29, 1982, 100% of the site checks will be complete.

B. RESPONSE
    a. Learning process for all
    b. Has helped all
    c. Great Data Bank

C. PROGRAM CONTINUATION
    a. Next 60%
    b. Rep. Fried/Sen. Rozell

SCHOOL EVACUATION PLANS

Travis Tice
Driver and Safety Education, SDE

I want to thank Mr. Martin for asking me to be here this morning and especially for the opportunity to talk to you for just a few minutes about the safety and welfare of your respective students.

Emergency planning is very important to all school districts. The school superintendent and local board of education has a moral and legal responsibility for the safety, health and general welfare of all students and personnel of their respective schools. The concern for the complete safety of staff and students should be communicated through a comprehensive planning model which covers all contingencies. Consideration should be given to the total involvement of all students, staff and administrators in the development of an emergency disaster plan.

I would call your attention to a booklet prepared by the Oklahoma Civil Defence office, entitled "Emergency Disaster Plan for Oklahoma Schools." I encourage you to get a copy and take a close look at the section that deals specifically with suggested General Guidelines for School Emergency Plan.

The parts of the guidelines that I want to pay particular attention to this morning are:

1. Education, Training and Instruction
2. Drills – for all students and school personnel and,
3. Facilities.

Education, Training and Instruction – Emergency Management Instruction should be provided for faculty, students and non-teaching personnel.

Safe school evacuation is dependent on training and instruction and should include drills for all students and school personnel. Adequate instruction and practice drills are necessary to insure the success of the school disaster plan. These plans should include evacuation of the building to designated areas, reaching shelter within the building, taking cover and assuming a sitting protective posture if time is not sufficient to reach shelter area or evacuate.

Drills should be practiced frequently enough for everyone to become familiar with procedures and routine enough for everyone to operate smoothly. Drills should be accepted as a standard procedure rather than an emergency.

Every school building should be equipped with a fire alarm system. The alarm sounding devices should be of such design and distributed in such a manner as to be audible in every room of the building above all other sounds. These devices should be destinctive in pitch and quality from other sounding devices in the building. All exit-drill signal devices should be installed on an independent signal system and not on the signal system which is used to change or dismiss classes. The signaling devices should be used only for emergency purposes. Fire drill (alarm) bomb threat etc. The fire-exit drill alarm system should be checked each day the school is in session by a member of the custodial staff and a report made to the principal.

The first drill should be announced in advance so that instructions can be given and procedures established. Time is not of the essence in the first drill.

Drills should be regulated as to number (recommend one per month) and at various times during the school year, day of week, and hour of the day. Section 737, 1981 Supplement to school Laws of Oklahoma reads as follows: "All public schools, grades one through twelve and all dormitories at institutions of higher education shall have a minimum of one (1) fire drill per school year. The drill shall be conducted within the first fifteen (15) days of the school year, and all students and teachers at the public schools and all residents of the dormitories at the institutions of higher education shall participate."

It shall be the duty of the principal, under the direction of the superintendent of the public schools, and the director of housing at the institution of higher education to formulate procedures for the orderly evacuation of buildings and dormitory rooms upon the sounding of a distinctive audible signal designated as the fire alarm.

Each public school and institution of higher education shall document each fire drill in writing and such records shall be preserved and made available to the State Fire Marshall or his agent upon request (63-176).

Our section (Driver and Safety Education) has developed a recommended Fire-Exit Drill Plan. This plan is available to you upon request. We think it is comprehensive enough to satisfy the needs of the largest school as well as the smallest school. It also has an evaluation check sheet at the end to help you evaluate the adequacy of exit drill procedures in your school.

The safety, health and general welfare of each student is of paramount importance. It is our desire to be of assistance to you. Call on us when you have a need. Hopefully by the beginning of the 1982-83

term of school we will have available for your use, a K-12 Emergency Management Instruction Program that will meet your needs and assist with the development of an emergency disaster plan for your school and community.

If the Driver and Safety Education Section of the State Department of Education can be of assistance, give us a call or write and we will be available to help with your safety education problems.

SAFETY IN THE CLASSROOM

Eugene V. Smith
Science Specialist

How safe are your science classrooms?

According to the National Safety Council, about 32,000 school-related accidents occur each year and about 5,000 of these accidents (or incidents as you may prefer to call them) are science related. Junior high grades 7-9 experience the highest frequency of accidents while elementary grades report the lowest accident frequency. Another source estimates that on the average we can expect one major accident per 40 students per year in laboratory settings throughout the country.

The responsibilities of a science teacher are many and varied. Not only must you teach subject content, but you must also be constantly aware of the risk factor involved in the many laboratory experiments conducted in the classroom.

Students have a right to learn how to think scientifically and solve problems through the active use of science processes. They should have ample opportunities to engage in scientific work through laboratory or other "hands-on" activities. These concrete experiences are necessary for prime results at the elementary as well as the advanced levels of learning. With the trend of science education toward more activity-oriented work and more involvement of students in the processes of science, it is essential to develop a positive approach to laboratory safety. Safety should be an integral part of the planning, preparation and implementation of any science program.

An experiential science program possesses certain potential dangers. Yet, with careful planning, most potential dangers can be coped with safely in an activity-oriented science program. The responsibility for safety and the enforcement of safety regulations and laws in the science classroom and laboratory is that of the principal, teacher, and student – each assuming his or her share. Carelessness and a negative or apathetic attitude toward safety are the major causes of accidents.

The prevention of accidents can be accomplished through a positive science safety educational program which places emphasis on teacher and student awareness of the potential dangers in science-related activities. "Safety First" should be the basic motto for the school science program.

Let's focus our attention for a few minutes on Safety and the Law.

The principal is responsible for the overall supervision of the safety program in the school. Likewise, the science teacher is responsible for the supervision of safety in the science class and individual teachers can be held liable for negligent acts resulting in personal injury to students.

Teachers can avoid lawsuits resulting from injuries in a science lab by exercising "reasonable" care at all times, but the schools as well as suppliers of science equipment and materials must meet strict criteria.

James Ric Gass, attorney and associate law professor at Marquette University in Milwaukee, told a session at the National Science Teachers Association annual meeting held this month in Chicago, that the best defense against "common law negligence," the primary area under which damages are recovered, is to act like the average "reasonable person" would.

This includes warning students of risks before an activity, demonstrating the activity, supervising it, instructing the students as to what is being done and why, anticipating accidents and being ready to administer fire aid if needed, and making the lab safe.

Lab owners, that is the schools, can also be sued for "safe place negligence" and must act even more responsibly than the average person by making the lab as safe as possible, Gass said. He advised teachers to protect themselves against charges of safety by filing written notices with the school administrators if proper safety equipment is not provided.

Suppliers of materials or equipment may be sued under yet a third category – "strict liability," which requires them to pay damages resulting from unreasonably dangerous and defective products.

The state science supervisors have developed a short slide presentation. The title of this film is "The Buck Stops Here."

An important topic that was not covered in the film is that of the extra precautions required for handicapped students. Teachers are urged to welcome these students into the labs, but to take special precautions, such as making first aid materials accessible to students in wheelchairs, keeping paths clear and familiarizing the students with the lab ahead of time. The teacher and the handicapped student should discuss the potential dangers and work out solutions together.

The State Department of Education has recently developed and distributed a new publication entitled "Safety Precautions for Science." Copies were forwarded to all superintendents throughout the state. If through some error in mailing you did not receive a copy, or if you require additional copies for your

teachers, they may be requested from the Curriculum Section of the State Department of Education. For your convenience several copies are available at the back of the room and may be picked up as you leave.

Please keep in mind that although we have endeavored to cover the most common problems encountered in teaching science, as in all publications it is impossible to anticipate and adequately list precautions for all situations that may arise in your particular school.

One item should be emphasized. With increased frequency we read about schools being vandalized. The vandals are using materials from the science storage areas to create real havoc. Please make sure that you have taken steps to secure these chemicals.

Another publication that should be available in every science lab and storeroom is the latest catalog put out by Flinn Scientific, Inc. P.O. Box 231, 910 Wilson Street, Batavia, Illinois 60510. This company lists the proper storage for each chemical as well as the hazards and recommended disposal method.

I want to stress also that a complete current inventory of all chemicals on hand in each storage area should be maintained, not only in the science lab itself, but a copy should also be kept in a fire-proof location such as the office vault. This could be of utmost importance to the safety of many personnel in case of fire or explosion. Many schools are using computer records to keep their inventories up-to-date.

Proper disposal of hazardous chemicals has always been a problem for many schools. To assist you in resolving this problem, I have contacted the following institutions and they have agreed to assist the schools in their area in storage as well as disposal of toxic chemicals. It is suggested that you make a notation of the contact person at the institution in your area. The list is as follows:

Ada, E.C.O.S.U., Dr. Don Stafford, (405) 332-8000
Tulsa, O.R.U., Dr. Margaret Forrester, (918) 495-6918
Weatherford, S.W.O.S.U., Dr. Dan Dill, (405) 772-6611
Stillwater, O.S.U., Mr. Jim Hanson, (405) 624-7241
Lawton, Cameron University, Dr. Bob Vowell, (405) 248-2200
Tonkawa, N.O.C., Dr. John Kuchera, (405) 628-2581
Goodwell, Panhandle O.S.U., Dr. James Hill, (405) 349-2611
Alva, N.W.O.S.U., Dr. David Bohlen, (405) 327-1700
Norman, O.U., Dr. Francis J. Schmitz, (405) 325-5581

Another source of advice on chemical safety is the Lab Safety Supply and their toll-free number is 1-800-424-9346.

Thank you for your time and attention.

LEGISLATIVE OVERVIEW

Sen. Herbert Rozell
State Senate

I feel that I am among friends that understand the issues that I am extremely interested in because I am constantly pestering Jim Fried with some of these issues and when we first started working on the capitol improvement he liked the idea but he said that he rather doubted that it would work at the present time and I knew it wouldn't because I knew I wasn't going to get the money in there at that time and I even settled for $500,000. I want you to know that we began to talk about it and he is a man with vision that did come around later and even this year he said Herb I think that we should run one from both houses to make sure that we try to get something through, because I think this is the year whether we get much funding in or not that we need to get the issues halfway settled.

The program we are working on is to do nothing but help for better education for boys and girls in the state. In my district we have schools that it is literally a shame for us to call a building to educate some of our young children in. I still have a lot of old 1943-44 army barracks. I have schools that do not have the proper seating capacities. All these things are of importance. The thing that really irritates me is that we are able in the State of Oklahoma to do things for a lot of different organizations, but we get to talking about helping the young people the children of our schools, and I have my own colleagues to say just recently, "Herb, you are opening a bottomless pit." Isn't that too bad? Why would anyone say that about the most important commodity we have in the State of Oklahoma, our young people? Yet, we don't put any money into a program to make it better for them to be able to educate them in the capacity that they deserve to be educated.

To me the building is one of the important things. We are putting millions of dollars into higher education and I have no objection to that. I have a university in my district. I support it as strongly as I can. We have capitol improvement and we are spending millions of dollars in higher education. I would be tickled to death if we could get as much as $10,000,000 for a capitol improvement bill, which is a drop in a bucket to what we are spending on other buildings. I think this is of utmost importance. In 625 there are three components within the bill, one is a power equalizer. Some are in desparate need of buildings. Another part of the bill deals with if we have a storm that destroys a school, or if you have the ceilings that need to be removed because of the wrong material, that is another component of the bill and I don't think there is anything wrong with that. Not every school in the state would qualify.

I was in the school business for some time and speaking to you today is a pleasure, because I would shudder to think what it would be like to open a school building without the support personnel. I don't go as far as to like the idea that I have seen happen in places where the janitor hired and fired the superintendent, I think that is going a little too far with support personnel. It does still happen a place or two, but I don't think that should happen. I think these are very important people.

This year there will be approximately a 12 1/2% increase in funding and some of this will be about a 10% in the salary, if the bill finishes as is. The other will be for fringe benefits.

I feel the capitol improvement bill is a necessity. I would appreciate your support by talking to the people in your district, even if your school is not in the shape the others are in, because all students deserve that right to have a warm building in the winter and a decent building in the summer, one that doesn't leak, one that has all the windows in. I don't think we are asking too much for that. It is hard to understand some of my better friends are in western Oklahoma. We fight a lot. We fight over water, we fight over natural gas, prices and so on. We don't have any of that. If we could sell the water we have in eastern Oklahoma and put that into our school districts we would be alright.

LEGISLATIVE OVERVIEW

Rep. Jim Fried
House of Representatives

I am going to touch upon a few things that Senator Rozell and I have been working on this year with a number of people who are here and in terms of school facilities program. Then I will let Herb really go into a little more detail on them as he sees fit.

We introduced two bills this year SB 625 and HB 1466. Both of those would have established or would establis': a school facilities program for capitol improvement projects necessary for the schools. Both of those bills have now made it through both houses of the legislature and are in a conference committee. Senator Rozell and I will decide next week which one of the bills we will use and in all probability it will be SB 625. I have visited with the Speaker over on the house side and he has said that if we are to do anything and he certainly is not making any commitments, and I want to make that very clear, but if we are to do anything in terms of providing funding for school facilities this year he would like for it to be done in the late capitol improvement bill that won't be passed until we come back in July. As a result of that, the committees will be meeting all during the month of June deciding what all is going to be in that bill and he certainly is willing to listen to the request and I know that Senator York on the other side has similar feelings with that. It's not over this year in terms of what we might do as far as funding is concerned. Just being completely honest, I don't think that there is a great possibility or probably even a very good possibility that we are going to put large sums of money into that program this year, but that's a process that I think you all know that whenever you are talking about getting into capitol improvements for schools, you are talking about development of a big money item and through the legislature it's a process of getting it started and getting some movement in that direction and eventually getting what you want. I think Herb will agree with this, we are a lot closer today than what we have been in the past and we are just inching along getting closer. I do think eventually, that is going to happen. To personally put an editorial comment on that, I think it's about time that it does happen and I think it's about time that the State of Oklahoma places high priority as high priority at least upon providing some safe school buildings for kids across the state as we do in providing for office building space and for higher education and for highways and the like. I think that the time is rapidly approaching.

The governor has helped in that process tremendously. He put money in his initial budget request that Carolyn has talked about that really will begin a process of allowing Bob Martin and his division at the State Department of Education to start developing that division. If you get into an area such as capitol improvements for schools you certainly in the agency that provides the service to the local school district, you are going to have to have the capacity there for them to handle that. Quite frankly, right now that is not the case. He is tremendously underfunded and understaffed over there. I think Governor Nigh recognized that and he placed that into the budget.

We are looking at some things that we might do in addition to that. As Carolyn said, something that everyone has to keep in mind, whether it is dealing with capitol improvements, whether it is dealing with salary money, or formula money or whatever, the governor when he makes his budget request for the first year is limited to the amount of dollars that are available at that time. We all understand that by the end of the session, there is more money available and we can do more things. That is not to say that George Nigh would not have done them had he had the opportunity. He just had to submit his budget a lot earlier.

I think that it is important that people do understand that. A lot of times we get this feeling among people throughout the state and especially in the area of education, that here's a governor who only requested $1,600 salary increase and the legislature has come along and they have upped that to $2,000 so the legislature is the good guy and the governor is the bad guy. I think that you really need to understand how that works. Those limitations that are placed upon him limit certainly what he is able to do.

He did do that as far as the bill was concerned and there are then three bills that will impact upon that. Two of them I have talked about, 1466 and/or 625, probably will pass 625 and just leave 1466. I don't see there is really a need of passing both of those.

There is another bill, SB 524, by Senator Crutcher, that is currently in a conference committee and being looked at at the present time. What it would say would be that school districts would send their preliminary plans to the State Department of Education to have the State Department of Education advise them as to in their opinion whether they are meeting the building codes and the fire and safety codes before they start investing sums of money. The State Department of Education would not have the ability to deny the building of those structures. They would be just an advisory type process. We have had many school districts that have requested that saying we just simply do not have the expertise on the local level

to do that and instead of us going out and hiring that expertise, we sure would like for the State Department to provide that service. If we are going to pass 524, we are going to have to give Bob some help over there in his division in terms of having the staff to work with that.

Other than that we are just on the old standard education funding controversies and they will be worked out in the next two or three weeks, hopefully.

LEGISLATIVE OVERVIEW

Dr. Carolyn Smith
Governor's Office

I'm not quite sure what to say to you in the form of a legislative overview. I decided what I would do is talk to you in the most general terms about what the Governor's priorities were at the beginning of this legislative session, with the understanding of course that events that have occurred between the beginning of this session and now are going to have some greater or lesser impact on his priorities and also the form in which these concepts finally arrive on his desk is going to have some impact on the final decisions that he makes.

I think his number one priority as far as public education is concerned at the beginning of this session and remains, to retain the revisions which the legislative effected last year in the method of distributing state aid to public schools. The reason he thought it was important to retain those revisions for a while was to reestablish some stability in the funding public schools especially in light of the federal cuts that are coming down almost daily and changing daily. He felt it was important to maintain stability in the state source of funding and he also thought that we needed a little time to access the impact of the revisions made by last years legislature.

As you are probably aware, the major revision made last year in the distribution of state aid was to make sure that a larger proportion of the state appropriation to public schools is distributed through the formula. The reason for that is because it is the formulas function to equalize educational opportunity available to all children in the state. That is to assure that public funds, state and local funds, will cover the same proportion of the cost to educate every child in the state.

The Governor also recognizes the need to provide incentive for innovation, the need to provide funding for special programs. In his proposal to the legislature he maintained several line item appropriation requests to fund special programs like library resources, arts in education, early childhood education, and programs of that nature.

He also recognizes very clearly the need to offer sufficient salary to maintain and to attract the highest caliber of people in the education field, both in the teaching and the administrative and the support personnel aspect of that. In his proposal, his original proposal to the legislature, you have the largest proportion of state aid to public schools being distributed through the formula, you have two relatively large line items for teacher salary increases that are probably going to come to about $2,000 per teacher, support personnel salary increases that will probably come to about 12%, you have the special program line items.

Two of his priorities related to the distribution, the first is the method whereby the teacher salary increases are distributed, he proposed that across the board distribution. Distribution not according to teacher salary schedule, but distribution based upon the number of teachers in the district and he still feels that this method of distributing the teacher salary increases is important because the formula already includes a teacher experience and education factor which provides financial incentive to the districts to attract and maintain better educated and better experienced faculty people staff. The other thing that was important and remains important is that previous year salary increases for teachers and for support personnel he placed through the formula. The FY 82 salary increases rather than maintaining them separate as a line item, he put them through the formula. He did also increase the hold harmless level to cover in order to assist administrators in covering their commitment for those salary increases. The message he wanted to communicate there is that it is important to bring our staff salaries up to a professional level, but that this is a temporary need that the state should have to do this. What his hope is, is that eventually money will be able to go through the formula and will have an impact on salaries through the experience education incentive factor.

One of the governor's highest priorities in the state department appropriation and it still remains one of his highest priorities is to set up a program to assist school districts in the wise utilization of their capitol outlay and their school plant expenditures and I don't need to tell you this, you know that school plant is the second most costly item in school district budgets. It counts for about 25% of school expenditures of the school budget. He recognized that and this year he decided to do something about it and to set about implementing a program to address this. He set up a program or he supported the State Department's request for a program to provide technical assistance training and information on preventive and cost effective operation and maintenance. We are dealing with the safety problem there, preventive maintenance and we are also dealing with money problems, efficiency, more cost effective operation and mainteanance.

The program that he proposed originally would allow for voluntary review of school district construction plans, both renovation and new construction plans for educational functions safety, legal requirements and energy efficiency. I believe there was also enough money to complete the inventory. He believes having that information is necessary. The more information you have the sounder your decisions can be.

PREVENTIVE MAINTENANCE: A GOOD WAY TO AVOID ACCIDENTS

Orville Eaton
Muskogee Public Schools

1. Hotwater tanks, pop-off valves, safety features. Check every three months.
2. Boilers, rodding, double safety valves, automatic controls. Check twice a year, June and Christmas vacation.
3. Yearly unnoticed needs:
   Pest Control – check every July and August
   Fire Extinguishers – check every September, January and periodically
   Clocks – check every September
   Water Fountains – check every June, July and each month, and emergency
   Paint and Equipment – every June
   Light Bulbs, florescent or incandescent types, cost – check once a month.
4. Inspections:

Fire Department	Boilers – once a year (Oct.)
Gas Company – twice a year (June & Dec.)	Heaters – monthly
City Inspector – once a year	Hot Water Tanks – every 3 months
City Electrical – as needed	Controls – twice a year and as needed
Insurance Co. – once a year (Nov.)	O.S.H.A. – once a year
State Dept. of Labor – once a year	

5. Special Preventive:
   Stadiums
   Baseball fields (girls & boys)
   Tracks
6. Preventive Maintenance Services Personnel:
   Plumbers – we have one
   Air-conditioning – we have one (filter man)
   Electricians – we have one
7. Blacktopping – summer if funds available.
8. PA Systems – Preventive – check twice a year.
9. Maintenance Personnel For Preventive Maintenance (12):

Foreman	Ass't. Painter
Carpenter	Haulers, Driver, Trash, Equip., etc.
Ass't. Carpenter, locks, keys	Filter man
Plumber	Mailman, deliveries
Electrician	Warehouse Delivery
Ass't. Foreman, Painter	

10. Date Work Needed Reason Conditions
    Number Completion Return Preventive
    Approval
11. Electrical:
    Transformers, clean up electrical on site
    Wiring check panels, panel covers, Ballasts, bulbs, tighten screws, wall boxes and covers, check all covers.

12. Air-condition check up:

    Multi Zone – Multi Phase 2 room units

Filters	Motors	Relays	Check Thermostats
Belts	Smoke Detectors	Zone Heads, dampers	
Freon	Oil Bearings	Sheaves	

13. Pre-Fabs – (14) – yearly inspection:

Doors	Heating	Locks
Windows	Heat & Cool	

14. Summer Priority List – (start now)

    Jobs for each school (Preventative Maintenance)

15. Public Address Systems – Summer Check ups for:

Stadium	Cafetorium	Wiring
Gyms	Microphones	

16. Scoreboards

    Unit Packs

    Stadium

    Gyms

17. Winter Preventive – Turn off, etc.

    Frozen water pipes problem, check heat to protect

18. Fence:

    Repair and new – Summer and monthly check

19. Locks, Keys, Panic Bars:

    Check completely in summer on all three, and once a month.

20. Maintenance Vehicles – Preventive Maintenance:

    Repairs – once a year

    Tires – check weekly

    Oil – check monthly or as needed

    Grease – every six months

    Tune up – as needed

KEEPING THE LID ON

RELIEF VALVES AND HOT WATER SYSTEM SAFETY

Curt Walters
Watts Regulator Company

"Installation of Safety Devices" is a subject which certainly has prompted much discussion and confusion over the years. This subject is relatively simple, however, once the basic factors are considered and applied.

The relief valve is nationally recognized and accepted today because most officials realize that an exploding 30-gallon water heater has the force of about two pounds of dynamite. A comment was made recently that relief valves "aren't necessary anymore" because water heater explosions don't occur. This philosophy is somewhat like saying we can do away with sanitary regulations because epidemics don't happen anymore. The true fact is that because relief valves are now nationally accepted and applied, their required use has brought a significant reduction in the number of explosions and overheating hazards.

What we are doing is mating the relief valve to a water heater, and it is at this point that we must consider some basic factors. An immediate question involves the size of the heater versus the rating of the relief valve. What type of heater is involved? Is it internal flue, or external flue? This determines what style of relief valve we apply. Also, other important factors are: where does one install the valve . . . is the heater side-tapping or top-tapping . . . what length thermostatic element is used 2", 5", 8" or 9" . . . finally, what size drain line is used from the relief valve? How long will it run in distance and what direction must it take?

Based on these various factors, we can formulate a simple checklist to ensure that the valve is selected and applied correctly, and that the installation will afford maximum protection and trouble-free operation. The factors to be considered are sizing . . . styling . . . installing . . . and draining. First size the valve so that its rating is in excess of the BTU input of the heater. You can't put 10 gallons of water in a five gallon bag. The valve must be capable of discharging more BTU's than the heater is capable of putting into the water.

This brings us to the second factor, which is to check the heater design thoroughly, particularly as to whether it is an internal flue or an external flue heater. On external flue heaters, the relief valve should be equipped with an extra length thermostat which would allow it to extend past the flue area and into the tank water. If the element is located in the flue area, the hot flue gasses would actuate the relief valve on each cycle causing frequent relief and ultimately, possible valve failure.

Thirdly, the valve must be installed so that its temperature sensing element is in contact with the hottest water at the top of the tank. For example, if the valve was installed with the temperature sensing element four inches away from the hot water outlet tapping, in a tank with three-quarter inch connections, tank temperatures could rise to 244 degrees before the valve would relieve at 210 degrees. This is called "thermal lag" and extreme care should be taken to eliminate its occurence.

By the same token, particularly on electric heaters, applying a standard length four-inch or five-inch thermostats directly into a side tapping could locate the thermostat very close to the heater element. The result would be constant energizing of the relief valve element, subjecting the system to frequent, unnecessary discharge. The solution in such cases would be to use a short-type thermostat.

The last point on our checklist has to do with drain lines from relief valves – an extremely important but often neglected factor. All manufacturers require that a drain line be piped from the relief valve in order to channel any overflow to a safe place of disposal. Obviously, a discharge pipe terminating above a finished basement floor would not be considered a safe place of disposal and, as a result, some lawsuits have developed, based on water damage claims. On the other hand, and more important, is the fact that a drain line does cause some restriction, and tests have proved that under certain conditions this restriction could reduce the relieving capacity of some valves by 28 percent! This is a significant reduction!

Now, we must be realistic and recognize that in order to assure proper and safe drainage from a relief valve, a drain line may have to be piped a considerable distance. Greater distance and more changed in direction result in more fittings, all of which increase restriction. When you increase restriction, you reduce the relief valve capacity. Therefore, in cases where distance and change in direction are necessary, it is recommended that a drain pipe one size larger than the relief valve discharge connection always be employed. For normal installations, it should be recommended to have the drain line run no more than 15 feet with a maximum of three elbows. Never trap the drain line, and always have the end visible so you know when the valve is relieving.

Now, let us discuss the ASME pressure steam rating. This should be carefully considered because it

represents the ability of the device to discharge steam pressure at the set pressure of the valve. Consider an example of a 150 pounds set relief valve with an ASME pressure steam rating of 2,000,000 BTU/Hr. Before that valve can deliver 2,000,000 BTU/Hr., there must be generated within the tank over 150 pounds of steam pressure and, you will agree that this is certainly an unsafe condition. The tank could rupture and explode prior to reaching the relieving ability of the valve. This writer would not recommend such a rating because of potential confusion in its application.

The next rating is temperature steam, which is the basis used in ANSI Standard Z21.22. This is a much more realistic rating, and one used nationally for sizing relief valves. This rating is obtained initially on a test tank where 15 pounds of steam is assumulated. Under these conditions, the thermostat has opened the valve and the steam flows through the orifice into an assumulation tank, where it is measured and translated into a valve rating. As mentioned previously, this was the safest form of rating relief valves because it takes into consideration the fact that no water pressure is available to the heater. Therefore, it covers remote, but potential elements, which could affect the relieving capacity.

The third rating is called temperature water rating, which was the basis used in the old Z21.22 Standard prior to 1959, for rating relief valves. The rating is based on temperatures in a test tank rising to 220 degrees, while maintaining a service water pressure of 30 pounds to the heater. Under these conditions, the relief valve thermostat would lift the disc off the seat and the hot water, pushed by 30 pounds service pressure, would flow into a measuring tank where the rating is translated into BTUs per hour.

The relationship of temperature steam rating to temperature water rating is about one-eighth, meaning that a temperature steam rated valve would have one-eighth the rating of a temperature water rated valve, in the three-quarter-inch size. For one-inch size and larger, the ratio is about 4 to 1. The important factor here is that if a valve is applied to a heater on the basis of its temperature water rating, and during an emergency condition, the service pressure was interrupted for any reason, its rating could then be reduced considerably. Therefore, when using temperature water ratings, be sure the valve rating is well in excess of the heater BTU input rating.

CHECKLIST FOR INSPECTING OF

HOT WATER HEATERS

Leonard Cokely
Trade and Industrial Education

After the Star Spencer catastrophe we started having calls from school administrators asking if we had anything available to present to public school maintenance personnel on a very basic level. We did some checking and so forth, we started working with the State Department of Education and also the State Health Department and we came up with a very simple, what we call a "hot water safety inspection program." We just finished presenting this program at thirty-three different locations in Oklahoma giving thirty-five programs to public school maintenance personnel.

I'm going to pass out a booklet and I would like to explain this program to you. We did not know what level maintenance personnel we would have at the program, therefore, we had to develop the program as simply a safety inspection awareness program, no parts changing whatsoever. We felt like these people, your maintenance people, would be at different levels of building so we had to stress for them to go through the safety inspection program and if they found something that was incorrect, to get someone they considered qualified, a licensed plumber or licensed maintenance man, to repair this equipment. We did stress if they found something that was not up to standards, shut that system off immediately and get it repaired.

We encourage administrators to use the type of safety inspection in their school systems that is in the back of our booklet. We also encourage administrators to be aware of this safety inspection form. We told the maintenance people that we encouraged the administrator to have this form on file indicating that this system was visually checked and possibly even repaired. There are also safety inspection tags in the back of the booklet. We suggest that you tag all inspections.

Thank you.

SCHOOL PLANT MANAGERS ASSOCIATION

FOURTH ANNUAL WORKSHOP

April 20-21, 1982
Quality Inn Central
Oklahoma City, Oklahoma

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Beulah Black	State Department of Education	
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Leonard Cokely	1515 W. 6th, Stillwater, OK	State Department of Vocation-Technical Education

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Larry Dresser	P.O. Box 55, Poteau, OK	Arbo Enterprises
Jim Myers	2904 Woodhollow Trail, Edmond, OK	Tremco, Inc.
Bill Keith	6618 E. King, Tulsa, OK	Untied Energy Systems
Kevin Best	Tulsa, OK	Best Energy Products
Dick Childers	P.O. Box 45603, Tulsa, OK	Mantek
Toby Thompson	Oklahoma City, OK	Mantek
Jerry Baxter	Dallas, TX	Mantek
Burle Jacobs	P.O. Box 45603, Tulsa, OK	Mantek

Tom Kiehurst	P.O. Box 35392, Tulsa, OK	Balco Equipment
Troy Enos	Oklahoma City, OK	E & E Sales
Frank Hibbes	1001 Enterprises, Bay 11, OKC, OK	SSI
Roger Gresel	1001 Enterprises, No. 16A, OKC, OK	Arbo Enterprises
Jerry Shones	1001 Enterprises, Bay 11, OKC, OK	SSI
Paul LaVene	3601 N. Classen, No. 108, OKC, OK	Oklahoma Masonry Institute
Richard Arnold	Dallas,TX	Mantek

DOOR PRIZES

COMPANY	GIFT	WINNER	SCHOOL
Amaroc Chemical Company	Lawn Sprayer	Al Banther	Kingfisher
Amatron	Drill Index	Troy H. Powell	Morrison
	Coffee Maker	Bill Martin	Edmond
ARBO Enterprises, Inc.	6 quarts Oil	Rich Pursley	SDE
Balco Equipment	Apollo Sprayer	R.C. Todd	SDE
Best Energy Product, Inc.	$50.00	Sonny Sherrin	Holdenville
	$50.00	Jim Quetone	Warner
Del Paint Manufacturers	1 gal. paint	Gene Gifford	Bartlesville
	1 gal. paint	Larry Darbison	Allen
	1 gal. paint	Woody Prior	Western Heights
	1 gal. paint	Kendall Brashears	Fairview
	1 gal. paint	Jerry Logan	Millwood
	1 gal. paint	George Collins	Apache
	1 gal. paint	Richard Ross	Ada
	1 gal. paint	Don Harris	Hobart
	1 gal. paint	Jack Fenimore	Sperry
	1 gal. paint	Andy Young	Holdenville
G.T. Industries	50' garden hose	Ron Boles	Empire
Huntington Laboratories	$50.00	Charles Briley	Idabel
Kippers			
Mantek, Inc.	Tape Recorder	Vernon Young	Paoli
	Clock Radio	Louis Galluzzi	Mingo
Miller-Norris Company	$25.00	Alva Melot	Tecumseh
Moulder-Oldham Company	1 case tissue	James Marshall	Idabel
Murray Womble Company	15 gal. gym finish	Al Minor	Roff
			E. Area Okla. Co.
Oklahoma Masonry Institute	Coleman stove	Conrad Stigler	Vo-Tech, OKC
Plastic Engineering	Skylight	Mike Bixler	Allen
Silicon Specialist	Sealant	Ray Dillman	Sapulpa
Technique, Inc.	Cap	Jane Worden	SDE
	Cap	Orville Eaton	Muskogee
	Cap	James Heard	Milburn
Tremco	Lamp	A.D. McDonald	Wapanucka
United Laboratories, Inc.	T.V.	Glen Reeder	Chandler
	Fuzz Buster	Anita Nail	Kingfisher
	Golf Balls	Dick Samples	OKC
United Energy	$20.00	Kendall Brashears	Fairview
	$20.00	Richard Lay	Prue
	$20.00	Michael Boren	Western Heights
	$20.00	Lloyd Snow	Elgin
	$20.00	Jack Whaylen	Blackwell
Utility Savers			
Watts Regulator	Pen Watch	Claude Shien	Muskogee
	Pen Watch	J.C. Collis	Holdenville
Wesche Company	Screwdriver	Glen Reeder	Chandler
	Screwdriver	Jim Hodges	SDE
	Screwdriver	Oliver Stripling	OKC
	Screwdriver	Harold Olehy	Bartlesville
	Screwdriver	Albert Randolph	Keystone
Womble			

OKLAHOMA SCHOOL PLANT MANAGER'S ASSOCIATION

BOARD OF DIRECTORS

1982-83

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Dr. Bill Martin	Operations	Edmond